

**Listing of Claims:**

1. (Currently Amended) An image forming apparatus  
comprising:

an image forming unit for forming a correcting image for  
correcting gradations of an output image, on a bearing body;

5 a sensor for measuring a reflected light quantity of the  
correcting image formed on the bearing body;

a gradation correcting unit for correcting the gradations of  
the output image, based on a measurement result of the measured  
reflected light quantity of the correcting image; and

10 a timing correcting unit for detecting a shift of  
measurement timing at which the correcting image is measured by  
the sensor, based on the measurement result by the sensor, and  
for correcting the detected shift of the measurement timing;

wherein:

15 the gradation correcting unit corrects the gradations  
of the output image using the measurement result which is  
measured at the timing corrected by the timing correcting unit,

the correcting image comprises a gradation pattern  
comprising a plurality of gradations;

20 the sensor measures the reflected light quantity of the  
correcting image at a fixed interval timing; and

the timing correcting unit detects a shift between a  
specified timing prescribed in advance as a timing at which a  
measurement of a head part of the gradation pattern is started,  
and a timing at which a measured value having a largest change of  
measured light quantity value in a vicinity of the specified  
timing is measured, as the shift of the measurement timing, based  
on the measured values measured at the fixed interval timing.

Claim 2 (Canceled).

3. (Currently Amended) The image forming apparatus ~~of  
claim 1~~ comprising:

an image forming unit for forming a correcting image for  
correcting gradations of an output image, on a bearing body;

a sensor for measuring a reflected light quantity of the  
correcting image formed on the bearing body;

a gradation correcting unit for correcting the gradations of  
the output image, based on a measurement result of the measured  
reflected light quantity of the correcting image; and

a timing correcting unit for detecting a shift of  
measurement timing at which the correcting image is measured by  
the sensor, based on the measurement result by the sensor, and  
for correcting the detected shift of the measurement timing,

wherein:

15                   the gradation correcting unit corrects the gradations  
of the output image using the measurement result which is  
measured at the timing corrected by the timing correcting unit,

                  the correcting image comprises a gradation pattern  
comprising a plurality of gradations;

20                   the sensor measures the reflected light quantity of the  
correcting image at a fixed interval timing; and

                  the timing correcting unit detects a shift between a  
specified timing prescribed in advance as a timing at which a  
measurement of a head part of the gradation pattern is started,  
25                   and a timing at which a measured value near to an intermediate  
light quantity value of measured values in a vicinity of the  
specified timing is measured, as the shift of the measurement  
timing, based on the measured values measured at the fixed  
interval timing.

4. (Original) The image forming apparatus of claim 1,  
wherein the timing correcting unit corrects the measurement  
timing of the sensor by the shift quantity of the detected  
measurement timing.

5. (Previously Presented) The image forming apparatus of  
claim 1, wherein:

the timing correcting unit corrects the shift of the measurement timing by selecting the measured value to be applied  
5 as an output density value of each gradation in the gradation pattern among the respective measured values measured by the sensor according to the detected shift quantity of the measurement timing; and

the gradation correcting unit performs the gradation  
10 correction based on the measured value selected as the output density value of each gradation.

6. (Currently Amended) The image forming apparatus of claim 1, wherein:

the correcting image comprises a plurality of gradation patterns ~~pattern comprising a plurality of gradations~~; and

5 the timing correcting unit detects the respective shift of the measurement timing from the plurality of gradation patterns, and performs the correction of the measurement timing by applying the shift quantities of the measurement timing, which are detected in the respective gradation patterns, to each of the  
10 gradation patterns.

7. (Currently Amended) The image forming apparatus of claim 1, wherein:

the correcting image comprises a plurality of gradation  
patterns ~~pattern comprising a plurality of gradations;~~ and

5        the timing correcting unit detects the respective shift of  
the measurement timing from the plurality of gradation patterns,  
and corrects the shift of the measurement timing by applying an  
average value of the shift quantities, which are detected in the  
respective gradation patterns, to all of the gradation patterns,  
10       as a common shift quantity.

8. (Previously Presented) The image forming apparatus of  
claim 6, wherein the plurality of gradation patterns are  
identical.

9. (Original) The image forming apparatus of claim 6,  
wherein the plurality of gradation patterns are different from  
one another.

10. (Currently Amended) The image forming apparatus of  
claim ~~2~~ 1, wherein each gradation of the gradation pattern is  
formed in order that the measurement by the sensor is performed  
in an order from a high density gradation to a low density  
5       gradation.

11. (Previously Presented) The image forming apparatus of claim 1, wherein:

the correcting image comprises a plurality of colors;

the gradation correcting unit performs the gradation  
5 correction of each color based on the measured value of the  
reflected light quantity of the correcting image comprising the  
plurality of colors; and

the timing correcting unit corrects the shift of the  
measurement timing at every measurement of the reflected light  
10 quantity of the correcting image of each color.

12. (Previously Presented) The image forming apparatus of claim 1, wherein:

the bearing body is a transfer member; and

the sensor measures the reflected light quantity of the  
5 correcting image formed on the transfer member.

13. (Currently Amended) An image forming apparatus comprising:

an image forming unit for forming a correcting image, which  
is an image for correcting gradations of an output image and  
5 comprises a gradation pattern comprising a plurality of  
gradations, on a bearing body;

a sensor for measuring reflected light quantities of the correcting image formed on the bearing body at a fixed interval timing;

10        a gradation correcting unit for correcting the gradations of the output image, based on measurement results of the measured reflected light quantities of the correcting image; and

15        a timing correcting unit for detecting a shift between a specified timing prescribed in advance as a timing at which a measurement of a head part of the gradation pattern is started, and a timing at which a measured value having a largest change of measured light quantity value in a vicinity of the specified timing is measured, as the shift of the measurement timing, based on the measured values measured at the fixed interval timing, and  
20        for correcting the detected shift of the measurement timing;

wherein the gradation correcting unit corrects the gradations of the output image using ~~the~~ a measurement result which is measured at the timing corrected by the timing correcting unit.

14. (Currently Amended) An image forming apparatus comprising:

an image forming unit for forming a correcting image, which is an image for correcting gradations of an output image and

5 comprises a gradation pattern comprising a plurality of gradations, on a bearing body;

a sensor for measuring reflected light quantities of the correcting image formed on the bearing body at a fixed interval timing;

10 a gradation correcting unit for correcting the gradations of the output image, based on measurement results of the measured reflected light quantities of the correcting image; and

a timing correcting unit for detecting a shift between a specified timing prescribed in advance as a timing at which a  
15 measurement of a head part of the gradation pattern is started, and a timing at which a measured value near to an intermediate light quantity value of measured values in a vicinity of the specified timing is measured, as the shift of the measurement timing, based on the measured values measured at the fixed  
20 interval timing, and for correcting the detected shift of the measurement timing;

wherein the gradation correcting unit corrects the gradations of the output image using ~~the~~ a measurement result which is measured at the timing corrected by the timing correcting unit.

Claims 15-21 (Canceled).



22. (Currently Amended) A gradation correction method  
comprising:

forming a correcting image for correcting gradations of an  
output image, on a bearing body;

5       measuring a reflected light quantity of the correcting image  
formed on the bearing body by ~~the~~ a sensor;

      detecting a shift of measurement timing at which the  
correcting image is measured by the sensor, based on a  
measurement result by the sensor, and correcting the detected  
10      shift of the measurement timing; and

      correcting the gradations of the output image using the  
measurement result which is measured at the corrected timing,  
wherein:

the correcting image comprises a gradation pattern  
15      comprising a plurality of gradations;

the measuring is performed by measuring the reflected  
light quantity of the correcting image at a fixed interval  
timing; and

the detecting and the correcting of the shift is  
20      performed by detecting a shift between a specified timing  
prescribed in advance as a timing at which a measurement of a  
head part of the gradation pattern is started, and a timing at  
which a measured value having a largest change of measured light  
quantity value in a vicinity of the specified timing is measured,

25     as the shift of the measurement timing, based on the measured  
      values measured at the fixed interval timing.

Claim 23   (Canceled).

24.   (Currently Amended) The gradation correction method ~~of~~  
~~claim 22~~ comprising:

forming a correcting image for correcting gradations of an  
      output image, on a bearing body;

5       measuring a reflected light quantity of the correcting image  
      formed on the bearing body by a sensor;

detecting a shift of measurement timing at which the  
      correcting image is measured by the sensor, based on a  
      measurement result by the sensor, and correcting the detected  
10     shift of the measurement timing; and

correcting the gradations of the output image using the  
      measurement result which is measured at the corrected timing,  
      wherein:

      the correcting image comprises a gradation pattern  
15     comprising a plurality of gradations;

      the measuring is performed by measuring the reflected  
light ~~quantities~~ quantity of the correcting image at a fixed  
interval timing; and

the detecting and the correcting of the shift is  
20 performed by detecting a shift between a specified timing  
prescribed in advance as a timing at which a measurement of a  
head part of the gradation pattern is started, and a timing at  
which a measured value near to an intermediate light quantity  
value of measured values in a vicinity of the specified timing is  
25 measured, as the shift of the measurement timing, based on the  
measured values measured at the fixed interval timing.

25. (Original) The gradation correction method of claim 22,  
wherein the detecting and the correcting of the shift is  
performed by correcting the measurement timing of the sensor by  
the shift quantity of the detected measurement timing.

26. (Previously Presented) The gradation correction method  
of claim 22, wherein:

the detecting and the correcting of the shift is performed  
by correcting the shift of the measurement timing by selecting  
5 the measured value to be applied as an output density value of  
each gradation in the gradation pattern among the respective  
measured values measured by the sensor according to the detected  
shift quantity of the measurement timing; and

the correcting of the gradations is performed by performing  
10 the gradation correction based on the measured value selected as  
the output density value of each gradation.

27. (Currently Amended) The gradation correction method of  
claim 22, wherein:

the correcting image comprises a plurality of gradation  
patterns ~~pattern comprising a plurality of gradations;~~ and

5 the detecting and the correcting of the shift is performed  
by detecting the respective shift of the measurement timing from  
the plurality of gradation patterns, and by performing the  
correction of the measurement timing by applying the shift  
quantities of the measurement timing, which are detected in the  
10 respective gradation patterns, to each of the gradation patterns.

28. (Currently Amended) The gradation correction method of  
claim 22, wherein:

the correcting image comprises a plurality of gradation  
patterns ~~pattern comprising a plurality of gradations;~~ and

5 the detecting and the correcting of the shift is performed  
by detecting the respective shift of the measurement timing from  
the plurality of gradation patterns, and by correcting the shift  
of the measurement timing by applying an average value of the  
shift quantities, which are detected in the respective gradation

10 patterns, to all of the gradation patterns, as a common shift  
quantity.

29. (Previously Presented) The gradation correction method  
of claim 27, wherein the plurality of gradation patterns are  
identical.

30. (Original) The gradation correction method of claim 27,  
wherein the plurality of gradation patterns are different from  
one another.

31. (Currently Amended) The gradation correction method of  
claim ~~23~~ 22, wherein each gradation of the gradation pattern is  
formed in order that the measurement by the sensor is performed  
in an order from a high density gradation to a low density  
5 gradation.

32. (Previously Presented) The gradation correction method  
of claim 22, wherein:

the correcting image comprises a plurality of colors;

the detecting and the correcting of the shift is performed  
5 by correcting the shift of the measurement timing at every  
measurement of the reflected light quantity of the correcting  
image of each color; and

the correcting of the gradations is performed by performing  
the gradation correction of each color based on the measured  
10 value of the reflected light quantity of the correcting image  
comprising the plurality of colors.

33. (Previously Presented) The gradation correction method  
of claim 22, wherein:

the bearing body is a transfer member; and

the measuring is performed by measuring the reflected light  
5 quantity of the correcting image formed on the transfer member.

34. (Previously Presented) A gradation correction method  
comprising:

forming a correcting image, which is an image for correcting  
gradations of an output image and comprises a gradation pattern  
5 comprising a plurality of gradations, on a bearing body;

measuring a reflected light quantity of the correcting image  
formed on the bearing body, by a sensor at a fixed interval  
timing;

detecting a shift between a specified timing prescribed in  
10 advance as a timing at which a measurement of a head part of the  
gradation pattern is started, and a timing at which a measured  
value having a largest change of measured light quantity value in  
a vicinity of the specified timing is measured, as the shift of

the measurement timing, based on the measured values of the  
15 reflected light quantity measured at the fixed interval timing,  
and correcting the detected shift of the measurement timing; and  
correcting the gradations of the output image, based on the  
measured value of the reflected light quantity of the correcting  
image after the correcting of the measurement timing.

35. (Previously Presented) A gradation correction method  
comprising:

forming a correcting image, which is an image for correcting  
gradations of an output image, and comprises a gradation pattern  
5 comprising a plurality of gradations, on a bearing body;

measuring a reflected light quantity of the correcting image  
formed on the bearing body by a sensor at a fixed interval  
timing;

detecting a shift between a specified timing prescribed in  
10 advance as a timing at which a measurement of a head part of the  
gradation pattern is started, and a timing at which a measured  
value near to an intermediate light quantity value of measured  
values in a vicinity of the specified timing is measured, as the  
shift of the measurement timing, based on the measured values of  
15 the reflected light quantity measured at the fixed interval  
timing, and correcting the detected shift of the measurement  
timing; and

correcting the gradations of the output image, based on the  
measured value of the reflected light quantity of the correcting  
20 image after the correcting of the measurement timing.

Claims 36-39 (Canceled).